

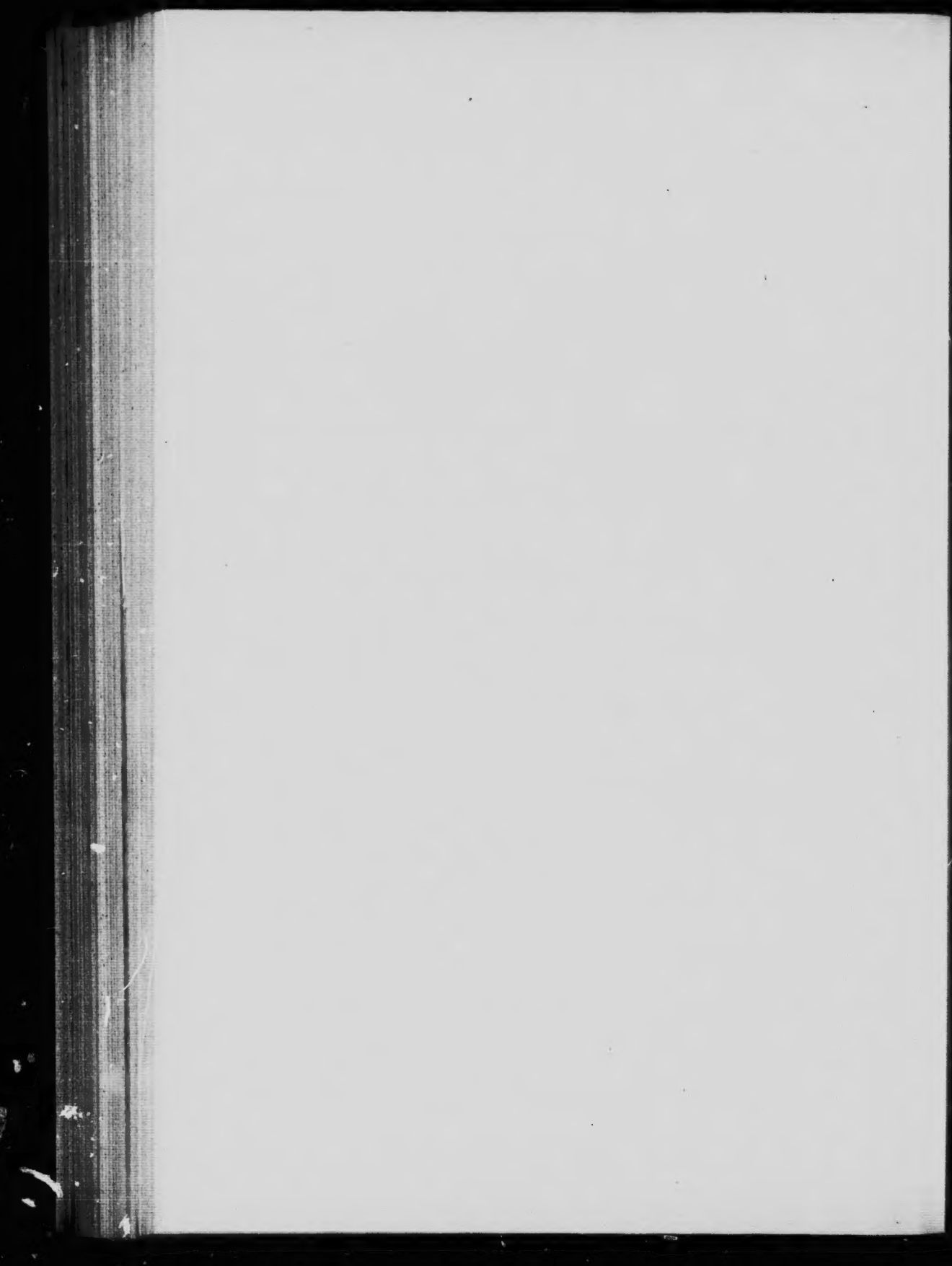
**CIHM
Microfiche
Series
(Monographs)**

**ICMH
Collection de
microfiches
(monographies)**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

© 1998



LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA

BULLETIN No. 399

MARMALADE

NOTES AND COMMENTS.

Under this heading, as occasion arises, the Bulletins issued by this Department will contain, as an appendix, such comment as may seem necessary or advisable upon matters relating to the work of the Department in connection with the administration of the Adulteration Act, the Fertilizers Act, the Feeding Stuffs Act or the Proprietary Medicines Act.

It frequently happens that correspondents ask information regarding the above Acts, of such a nature that the matter in question possesses general interest, and comment upon it would prove acceptable and useful to others than the immediate questioner. In such cases the reply may find a place in these columns. For convenience of reference these notes will be numbered in series.

A. MCGILL,
Chief Analyst.

LABORATORY
OF THE
INLAND REVENUE DEPARTMENT

OTTAWA, CANADA

BULLETIN No: 399

MARMALADE

OTTAWA, April 25, 1918.

J. U. VINCENT, Esq., K.C., B.A., L.Ph.,
Deputy Minister of Inland Revenue.

SIR,—I beg to hand you a report upon 148 samples purchased by our inspectors as *marmalades*, in October, November and December of last year.

This inspection was made because of many complaints received by the Department regarding the particular form of jam known as marmalade. The following quotations may serve as illustrations of the nature of these complaints: "It appears and tastes good, but seems very pulpy, and very little orange peel in it, not like the above named genuine Scotch makes. You know that those manufacturers use apple pulp, and what not, in their jams, etc." "Upon the complaint of a party who says that in the sample I am sending, by mail, of orange marmalade, under the label..... apple pulp has been used, without declaration on the label, etc."

Our standards for Jam (Circ. G. 1044) published in October, 1912, recognizes marmalade as a species of jam, and most food standards identify these articles.

Webster defines marmalade as "a preserve or confection made of the pulp of fruit, as the orange, quince (occasionally) pear, apple, etc. boiled with sugar, and brought to a consistence like jam."

Wiley (Foods and their Adulteration, p. 382) says: "The term *marmalade* is applied to a special character of fruit product prepared in the same manner as jam, in which the fruit is not so thoroughly pulped. This class of fruit products is so nearly the same as jam as not to need any special description."

It remains that, so far as Canada is concerned, the term *marmalade* is actually employed to distinguish a jam made essentially from oranges. This is proved by the fact that, of the 148 samples herein reported, and purchased by our inspectors simply as *marmalades*, 141 samples are nominally orange products.

Of 154 samples purchased as marmalades in 1911 (see Bulletin No. 233) 145 samples were made from oranges. Both collections considered, we find that 95 per cent of so-called marmalades purchased in Canada, are made from oranges.

If it were possible to restrict the term *marmalade* to a jam made from oranges and other citrus fruits it would become possible to fix standards for such a jam with much greater definiteness than is now the case; and the information furnished in what follows would enable the requisite constants to be determined.

The work of analysis of the samples herein reported has been largely in the hands of Dr. Geo. H. Brother, late of this staff; and he has done a considerable amount of investigation for the purpose of ascertaining the normal character of orange jam (marmalade).

The special feature which I wished Dr. Brother to investigate, was a method for the determination of *pectin*, present in excess of the amount natural to the fruit or fruits employed in manufacture of the jam; or in this instance, of orange jam or marmalade. Pectin is the name given to a compound of the carbohydrates araban and galactan (Koydl and Nestornitz Chem. Abst., 1914, p. 3725) which is present in all fruits to some extent and causes their juice to jelly when properly cooked up with sugar. As is well known, all fruits will not jelly; this is due to lack of sufficient pectin. Apples and quinces are especially rich in pectin, as well as some classes of beets and turnips. It is impossible to fix the pectin content of any fruit, as this varies with the season, condition of ripeness (Kopetski, Chem. Abst., Vol. 2, p. 1901) as well as with the species. Oranges, in general, do not contain enough pectin to form a firm jelly, and what they do contain is principally in the rind (Harley, Chem. Abst. 6 (1912), p. 2267).

Because of the fact that oranges do not, as a rule, contain sufficient pectin to form a jelly, some manufacturers add pectin obtained from other sources (usually from apples, the cores, skins, and other apple waste) but of course pectin may also be obtained from turnips, or any other vegetable material rich in the substance. Pectin is a perfectly unobjectionable food material; and the commercial article commands a price sufficiently high to make it impossible to regard its use as intended to materially cheapen the jam. It is used chiefly for the purpose of giving desired consistency and jellylike firmness to the product. At the same time it must be remembered that its use makes possible a reduction of the actual fruit content of the jam, without impairing consistency; and where the fruit used is high in price as in the case of oranges, there may be temptation to reduce the amount of fruit used, and to secure firmness in the product by addition of pectin. If the value of a specific kind of jam is held to depend upon the actual content of a named fruit used in its manufacture, and pectin be employed in order to give the impression that a larger percentage of fruit (oranges, in the case of marmalade) is present than the facts would justify, such use of pectin would constitute adulteration under Section 3 (b) of the Act. For this reason it becomes important to define a method by which added pectin may be determined.

Dr. Brother did a very considerable amount of work on this subject, but, his services being commandeered for work in connection with war munitions, we have accepted his resignation, and the work placed on record by him will have to be completed at a later time. It is not yet sufficiently complete to justify publication, and our staff is too fully employed upon other work to take up this investigation just now.

In samples made entirely from oranges, or other citrus fruits (and this is true of 144 of 148 samples now reported) the number given under Insoluble Solids furnishes a fairly good indication of the actual fruit used in preparation of the article. The number in question varies from less than 1 per cent to over 6 per cent, and may be averaged at about 3 per cent. Where the finished article has notable consistency, it is suggestive of the presence of pectin, added as such, or in the form of apple, or other pectin containing material. In samples prepared by Dr. Brother, the insoluble solids in the finished product were 7.04, 5.26 and 3.64 per cent respectively, from bitter oranges, thick skinned sweet oranges, and thin skinned sweet.

If these marmalades, as made in the laboratory from known material, could be accepted as fixing standards for insoluble solids in marmalade, it would appear that most of the samples herein reported have been made with too little citrus fruit, and that many of them owe their consistency to added pectin. I do not, however, think that it would be justifiable to draw sweeping conclusions from the limited data at our disposal, and consider it best to place on record the information obtained regarding these samples without further comment, at the present time.

The data now placed on record will be used at some future time in further investigation of this subject.

In the absence of specific standards for this variety of jam, all the samples herein reported must be accepted as satisfactory marmalades, with exception of the following, which fail to meet published standards:—

Numbers 78216, 79634, 76218 and 76223 contain salicylic acid, as a preservative, without declaration of the fact upon the label. This contravenes Order in Council of April, 1914 (published as Departmental Circular G. 1111) and therefore constitutes adulteration under the Act.

Numbers 81914, 80893 and 79634 contain notable amounts of glucose, without declaration on the label, and in this fail to meet requirements of Order in Council of October, 1912 (published as Circular G. 1044) and are adulterated under the Act.

Numbers 52820 and 76222 contain small amounts of glucose, evidently added for other reasons than as a sugar substitute. I have recommended that these samples be passed.

I would further recommend publication of this report as Bulletin No. 399, with the understanding that the data which it furnishes will be utilized in later study of the subject treated.

I have the honour to be, Sir,

Your obedient servant,

A. MCGILL,

Chief Analyst.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF NEW BRUNSWICK—

1917.							
Nov. 20	Marmalade.	78211	Thos. L. McDermott, St. John, N.B.	3 jars.	45	A. G. Neal, St. John, N.B.	
" 22	"	78212	M. E. Grass, St. John, N.B.	3 "	84	Furnivall New, Ltd., Hamilton.	
" 22	"	78213	Walter Gilbert, St. John, N.B.	3 "	90	Stuart's, Ltd., Sarnia.	
" 26	"	78214	W. A. Porter, St. John, N.B.	3 "	90	Libby, McNeill & Libby, Chatham, Ont.	
" 26	"	78215	Steeves Bros., St. John, N.B.	3 "	90	J. H. Wethey, St. Catharines.	
" 27	"	78216	Yerxa Grocery Co., St. John, N.B.	3 "	75	The Wentworth Orchard Co., Ltd., Hamilton.	
Dec. 11	"	78218	Smith Bros., Sussex, N.B.	3 "	75	W. J. Brigger, Hamilton.	
" 12	"	78219	Geo. A. Robertson, Moncton, N.B.	3 "	75	McGregor Specialty Co., Toronto.	
" 13	"	78220	S. Melanson, Moncton, N.B.	3 "	75	"	

DISTRICT OF QUEBEC CITY—

Nov. 6	Marmalade.	71104	A. Drolet, 712 St. Valer, Quebec.	3 lbs.	90	Libby, McNeill & Libby, Chicago.	Mfrs.
" 6	"	71105	"	3 "	1.06	Wagstaffe's.	"
" 6	"	71106	"	3 "	90	"	"
" 6	"	71107	"	3 "	1.05	"	"
" 7	"	71108	J. F. Falardeau, 126 de la Couronne, Quebec.	3 "	75	Unknown	Unknown
" 8	"	71109	E. Turcotte, 71 Defoses, Quebec.	3 "	54	Imperial Extract Co., Toronto.	Mfrs.
" 8	"	71110	C. Riverin, 55 Couronne, Quebec.	3 "	90	Libby, McNeill & Libby.	"
" 8	"	71111	"	3 "	90	Aylmer Can. Co., Aylmer, Ont.	"
" 8	"	71112	E. Turcotte, 71 Defoses, Quebec.	3 "	75	E. D. Smith, Winona.	"
" 8	"	71113	"	3 "	1.20	Crosse & Blackwell, London, Eng.	"

MARMALADE.

Inspector's Report. (Is not an expression of opinion.)	Results of Analysis.							No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than Sucrose, etc.		
	Insoluble.	Soluble.	Total.		Residual.	Original.			

JOHN C. FERGUSON, INSPECTOR.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.		
Strawberry	4.83	67.00	72.43	27.57	28.80	.....	38.80	78211	
.....	2.70	71.45	74.15	25.85	26.00	.....	45.45	78212	
Orange.....	2.38	69.30	71.68	28.32	41.60	....	28.30	78213	
"	2.28	60.85	63.13	36.87	15.08	.....	45.77	78214	
"	2.62	63.20	65.82	34.18	32.72	.....	30.48	78215	
"	2.63	67.10	69.73	30.27	16.59	.....	50.51	78216	Contains salicylic acid; 0.25 parts per 1000. Adulterated.
"	0.99	67.00	67.99	32.01	17.20	....	49.80	78218	
Grape Fruit	5.15	67.40	72.55	27.45	36.40	....	31.00	78219	
Orange.....	4.56	64.85	69.41	30.59	12.81	.....	52.04	78220	

F. X. W. E. BELAND, INSPECTOR.

Orange	2.25	63.05	65.30	34.70	8.30	.....	54.75	71109	
Ginger	2.78	70.65	73.43	26.56	32.60	....	38.05	71109	
Orange	2.76	64.60	67.36	32.64	28.62	....	35.98	71106	
Pine Apple	4.41	71.05	75.46	24.54	24.90	.....	46.15	71107	
Jelly Shred	2.87	70.35	73.22	26.78	12.67	.....	57.68	71106	
.....	3.10	72.59	75.69	24.40	35.60	....	36.90	71109	
.....	2.45	63.50	65.95	34.05	13.73	.....	49.77	71110	
.....	2.49	64.10	66.59	33.41	34.70	....	29.40	71111	
.....	1.57	71.90	73.47	26.53	20.95	.....	50.95	71112	
Orange	2.17	64.35	66.52	33.48	21.70	.....	42.65	71113	

BULLETIN No. 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF QUEBEC PROVINCE—

1917.							
Oct. 27	Marmalade.	5689	Charlemagne Taillon, St. Jerome.	3 jars.	90	Alex. Cairns & Sons	
" 29	"	5692	Pierre Simard, St. Jerome.	3 "	90	Paisley Scot.	
" 29	"	5693	Charlemagne Huot, "	3 "	75	Wagstaffe Ltd.	
Nov. 6	"	5503	J. E. Turbide, Ste. Therese	3 "	60	Aylmer Canning Co., Hamilton.	
" 20	"	5515	R. Touchette, Ste. Agathe des Monts.	3 "	90	Uptons.	
Oct. 22	"	7762	Joseph Rioux, Trois Pistoles	3 "	36	Crosse & Blackwell	
" 24	"	7770	J. Desrosiers, Rimouski.	3 "	90	Lytle, Toronto.	
						Wagstaffe Ltd.	

DISTRICT OF THREE RIVERS—

Oct. 24	Marmalade.	7573	Magnan Bros., Joliette.	3 jars.	1.05	E. D. Smith, Winona, Ont.	
" 26	"	7584	J. H. R. Deblois, St. Thomas de Joliette.	3 "	63	"	
" 27	"	7587	Charles Peltier, St. Gabriel Brandon	3 "	90	Crosse & Blackwell London, Eng.	
Nov. 5	"	8002	A. L. Caisse, Berthierville.	3 "	1.05	Wagstaffes, Hamilton.	

DISTRICT OF MONTREAL—

Oct. 22	Marmalade.	78961	Dupuis Frere, Ltd., St. Catherine St. E., Montreal.	3 jars.	66	Furnival Ltd.	
" 23	"	78962	H. Martel, 809 St. James St. Montreal.	3 "	45	L. Semetry, Montreal.	
" 23	"	78963	Geo. Brouillat, 105 Colborne St., Montreal.	3 "	45	Mrs. Lukes Montreal.	
" 23	"	78964	D. Payette, 595 St. Valier St., Montreal.	3 "	45	T. Upton, Co.	
" 24	"	78965	W. J. Brown, St. Catherine St. W., Montreal.	3 "	90	Shirriffs	
" 24	"	78996	Goodwins Ltd., St. Catherine St., W., Montreal.	3 "	75	E. D. Smith, Winona, Ont.	
" 24	"	78997	" " "	3 "	75	Wagstaffes Ltd.	
" 24	"	78998	" " "	3 "	75	J. H. Wethey Ltd St. Catharines.	
" 24	"	78999	Antine Sirios, 660 Ontario St. E., Montreal.	3 "	60	"	
" 24	"	79000	C. Guay & Co., 313 Ontario St. E., Montreal.	3 "	45	Lindners Ltd. Brampton, Ont.	

MARMALADE.

Inspector's Report. (Is not an expression of opinion.)	Results of Analysis.							No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.		
	Insoluble.	Soluble.	Total.		Residual.	Original.			

N. CADIEUX AND J. H. RIOUX TEMPORARY INSPECTORS.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
.....	1.93	70.79	72.72	27.28	20.04	62.96	50.75	5689
.....	1.62	66.15	67.77	32.23	18.88	62.06	47.27	5692
.....	1.86	68.34	70.20	29.80	46.57	63.08	21.77	5693
.....	1.20	65.69	66.89	33.11	39.87	63.17	26.82	5503
.....	1.56	69.12	70.68	29.32	20.41	63.68	42.70	5515
.....	1.98	67.47	69.45	30.55	30.10	55.73	36.88	7762
.....	1.30	68.54	69.84	30.16	28.63	65.70	39.91	7770

DR. V. P. LAVALLEE, INSPECTOR.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
.....	1.54	64.61	66.15	33.85	4.47	62.67	60.14	7573
.....	0.70	73.24	73.94	26.06	7.63	61.86	65.61	7584
.....	1.04	67.03	68.07	31.93	24.86	60.80	42.18	7587
.....	2.02	66.67	68.69	31.31	41.15	61.77	25.52	8002

J. J. COSTIGAN, INSPECTOR.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
.....	1.90	66.89	68.79	31.21	33.49	64.43	33.40	78961
.....	2.42	68.22	70.64	29.36	19.06	45.20	49.17	78962
.....	1.08	69.44	70.52	29.48	37.44	68.23	32.00	78963
.....	0.74	67.54	68.28	31.72	12.60	56.85	54.94	78964
.....	2.19	70.19	72.38	27.62	17.93	64.43	52.26	78966
.....	0.90	71.90	72.80	27.20	6.16	64.95	65.74	78966
.....	2.24	68.61	70.85	29.15	20.12	61.77	48.49	78997
.....	1.47	66.77	68.24	31.76	33.21	61.72	33.56	78998
McGregor Specialty...	1.13	62.53	63.66	36.34	3.94	57.07	58.59	78999
.....	1.86	64.65	66.51	33.49	46.85	63.17	17.80	79000

BULLETIN No 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF VALLEYFIELD—

1917							
Oct. 31	Marmalade.	79301	Geo. Dixon, Huntingdon, P.Q.	3 jars.	75	Geo. B. Jacobs, Oakville, Ont.	
Nov. 8	"	79302	Geo. Chalmers, Vankleek Hill.	3 "	75	Imp. Extract Co., Toronto.	
" 8	"	79303	J. W. A. Smith, Dalkeith, Ont.	2 "	30		
" 22	"	79304	W. J. Martin, Buckingham	3 "	90		
" 29	"	79305	Co-operative Society, Valleyfield.	3 "	75	Aylmer Canning Co Ltd.	

DISTRICT OF OTTAWA—

Oct. 26	Marmalade.	80453	F. F. Adams, Cardinal	3 jars.	75	J. H. Wetheys, Ltd., St. Catharines.	
Nov. 3	"	80473	W. H. Jones, Pembroke	1 "	90		H. N. Bate & Sons, Ltd., Ottawa.
" 3	"	80475	Fenton & Smith, Pembroke	1 pail.	1.65	Crosse & Blackwell, England.	
" 6	"	80478	Kavanagh Bros., Ottawa	3 jars.	90	E. D. Smith, Windsor, Ont.	
" 6	"	80479	" " "	3 "	1.35	Jas. Keiller & Sons, Ltd., Dundee.	
" 6	"	80480	" " "	3 "	1.35	" " "	
" 9	"	80491	J. R. Cook, Winchester	3 "	1.05	Wagstaffes, Ltd., Hamilton.	
" 12	"	80493	Bryson Graham Ltd., Ottawa	1 tin	1.65	Jas. Keiller & Sons, London, Eng.	
" 20	"	80509	King George Grocery, Bank St., Ottawa.	2743 jars.	75	The Waddell Preserving Co., Ltd., Brantford, Ont.	
" 20	"	80510	" " "	3 "	75	T. Upton Co., Ltd., Hamilton.	

DISTRICT OF KINGSTON—

Nov. 2	Marmalade.	81911	J. A. Lemmon, Kingston	3 jars.	60		W. G. Craig & Co., Kingston.
" 6	"	81912	T. Brenton, Belleville	3 "	45	Fretz Ltd., Hamilton.	
" 6	"	81913	A. W. Carwardine, Belleville	3 "	75	Glassco's, Hamilton	
" 6	"	81914	A. G. Vermilyea, Belleville	3 "	37	St. Clair, Preserving Co., Sarnia.	
" 6	"	81915	J. H. P. Young, Belleville	3 "	45	Ford's, Belleville.	

MARMALADE.

Inspector's Report. (Is not an expression of opinion).	Results of Analysis.							No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.		
	Insoluble.	Soluble.	Total.		Residual.	Original.			

J. J. COSTIGAN, ACTING INSPECTOR.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.		
.....	0.79	66.88	67.67	32.33	39.33	59.67	27.55	79301	
.....	1.23	70.19	71.42	28.58	19.97	66.04	50.22	79302	
Stealing Brand.....	2.08	67.39	69.47	30.53	13.61	63.69	53.78	79303	
Betty's.....	1.69	65.90	67.59	32.41	18.83	59.39	47.07	79304	
.....	2.80	71.33	74.13	25.87	37.89	63.17	33.44	79305	

J. A. RICKEY, INSPECTOR.

Pure Orange.....	1.32	66.86	68.18	31.82	23.88	63.68	42.98	80453	
Betty's Absolutely Pure.	1.95	66.42	68.37	31.63	21.09	57.64	45.33	80473	
Orange.....	1.73	69.79	71.52	28.48	17.14	65.19	52.65	80475	
Labelled Pure.....	0.66	71.35	72.01	27.99	22.08	64.91	49.27	80478	
Malted.....	1.32	72.10	73.42	26.58	24.91	.....	47.19	80479	
Sugarless.....	2.02	58.10	60.12	39.88	0.00	.....	58.10	80480	Non-Sugar Marmalade for diabetics.
Guarantee not to con- tain preservative or glucose.	2.40	66.29	68.69	31.31	24.13	61.10	42.16	80491	
.....	1.83	71.79	73.62	26.38	13.29	65.82	58.50	80493	
De luxe Orange.....	0.87	68.13	69.00	31.00	26.04	61.91	42.09	80509	
Pure.....	1.02	71.77	72.79	27.21	20.12	67.28	51.65	80510	

JAMES HOGAN, INSPECTOR.

.....	1.34	63.32	64.66	35.34	17.92	60.02	45.40	81911	
.....	0.41	65.08	65.52	34.48	23.11	62.46	41.97	81912	
.....	1.44	68.52	69.96	30.04	13.61	62.95	54.91	81913	
.....	0.68	69.32	70.00	30.00	13.52	.....	55.80	81914	Contains glucose. Adult- urated. Polariscope, direct +100.8 at 22°; in- vert +82.0 at 22°; glu- cose 49%.
.....	1.56	73.95	75.51	24.49	44.65	73.48	29.30	81915	

BULLETIN No. 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF KINGSTON—

1917.							
Nov. 7	Marmalade.	81916	W. H. Ireland, Trenton .	3 jars.	75	Wagstaffe, Hamilton.	
" 7	"	81917	E. T. March, Trenton.....	3 "	45	Canada Preserving Co., Hamilton.	
" 7	"	81918	F. Rosevear, Port Hope ...	3 "	75	Shirriff I. Ext. Co., Toronto.	
" 7	"	81919	F. H. Brown, Port Hope...	3 "	75	Upton, Hamilton.	
" 8	"	81920	Matthews-Blackwell, Ltd., Peterboro.	3 "	75	St. Williams Fruit Co.	

DISTRICT OF TORONTO—

Nov. 5	Marmalade.	80981	Medland Bros., 73 Front St. E., Toronto.	3 jars.	65	Wagstaffe, Ltd., Hamilton.	
" 5	"	80982	Jas. Lumbers & Co., Ltd., 67 Front St. E., Toronto.	3 "	1.05	E. D. Smith, Windsor.	
" 5	"	80983	H. P. Eckert & Co., Church St., Toronto.	3 "	"		MacLure Langley Ltd., Toronto.
" 5	"	80984	Eby Blain, Ltd., 21 Front St. E., Toronto.	3 "	61	St. Clair Fruit Products, Sarnia.	
" 5	"	80985	T. J. Medland, Ltd., 130 King St. E., Toronto.	3 "	45	The Canadian H. made, P. & P. Co., Toronto.	
" 6	"	80986	Imperial Extract Co., Matilda St., Toronto.	10 3 "	45	Vendors.....	
" 7	"	80987	The Robt. Simpson Co., Ltd., Queen and Yonge Sts., Toronto.	3 "	84	Glassco, Ltd., Oakville.	
" 7	"	80988	The T. Eaton Co., Ltd., Queen and Yonge Sts., Toronto.	3 "	45	P. McGregor, Toronto.	
" 7	"	80989	" " " "	3 "	90	Wagstaffe, Ltd., Hamilton.	
" 7	"	80990	Scott Bros., 190 King St. E., Toronto.	3 "	35	Dom. Cannery, Ltd., Hamilton.	

DISTRICT OF HAMILTON—

Oct. 23	Marmalade.	80891	Lindners, Ltd., Brampton..	3 jars.	51	Vendors.....	
" 23	"	80892	Simpson & Co., Guelph....	3 "	45	Aylmer Can. Co., Ltd., Aylmer, Ont.	
" 24	"	80893	Huetter & Todd, Guelph...	3 "	39	St. Clair Preserving Co., Sarnia.	

MARMALADE.

Inspector's Report. (Is not an expression of opinion).	Results of Analysis.							No. of Sample.	Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.		
	Insoluble.	Soluble.	Total.		Residual.	Original.			

Concluded.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
.....	1 92	65 71	67 63	32 37	33 16	59 40	32 55	81916
.....	1 08	55 19	56 27	43 73	23 61	52 43	31 58	81917
.....	1 45	70 44	71 89	28 11	27 20	59 55	43 24	81918
.....	1 06	68 49	69 55	30 45	53 93	66 23	14 56	81919
.....	1 10	71 49	72 59	27 41	40 49	65 19	31 00	81920

H. J. DAGER, INSPECTOR.

Pure Orange.....	1 88	67 97	69 85	30 15	28 56	61 24	39 41	80981
"	0 87	70 42	71 29	28 71	26 32	67 28	44 10	80982
Curling Brand Seville Orange.	1 16	72 06	73 24	26 76	43 83	63 93	28 25	80983
New Pure English...	0 82	71 13	71 95	28 05	36 20	61 42	34 03	80984
Pure Orange.....	1 53	61 38	62 91	37 09	6 23	54 33	55 15	80985
Shirriff's Imp. Scotch Brand, warranted pure, contains only cane sugar and seville oranges.	2 34	69 57	71 91	28 09	23 15	63 68	46 42	80986
Pure	2 14	70 82	72 96	27 04	5 06	60 33	65 70	80987
Pure Orange.....	1 28	68 78	70 06	29 94	15 49	61 28	52 29	80988
Green Fig.....	0 96	70 50	71 46	28 52	48 85	.....	22 65	80989
Red Seal.	3 56	70 78	74 34	25 66	40 38	64 95	30 40	80990

H. J. DAGER, ACTING INSPECTOR.

.....	2 22	61 80	64 02	35 98	6 93	55 40	54 87	80891
Orange.....	3 14	70 64	73 78	26 23	39 71	67 59	30 93	80892
Pure Orange.....	0 44	72 19	72 63	27 37	11 54	.....	60 65	80893

Contains glucose. Adulterated. Polariscope direct +108.0 at 22°; polariscope invert +92.8 at 22°. Glucose 55%.

BULLETIN No. 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Name and Address of the Manufacturer or Furnisher as given by the Vendor.		
				Quantity.	Cost.	Furnisher.

DISTRICT OF HAMILTON—

1917.						
Oct. 24	Marmalade.	80894	G. E. Zettel, Kitchener....	3 jars.	54	The T. A. Lytle Co., Ltd., Toronto.
" 24	"	80895	R. A. McDonald, Kitchener.	3 "	75	Stuart's, Ltd., Sarnia.
" 25	"	80896	Elvin Shantz, Waterloo, Ont.	3 "	54	Betty's Saratoga Chips, Toronto.
" 26	"	80897	John Sloan, Galt	3 "	45	J. H. Wethey, Ltd., St. Catherine.
" 27	"	80898	The Waddell Preserving Co., Clarence St., Brantford.	3 "	60	Vendors.
" 30	"	80869	Furnivall New, Ltd., Cumberland and Gage Sts., Hamilton.	3 "	65	"
" 30	"	80900	The T. Upton Co., Ltd., 193 Delaware Ave., Hamilton.	3 "	60	"

DISTRICT OF WINDSOR—

Nov. 5	Marmalade.	65328	Mann & McClennan, Aylmer, Ont.	3 jars.	90	C. & E. Morton, London, Eng.
" 6	"	65331	H. G. Charleton, Aylmer, Ont.	3 "	90	Wagstaffe
" 7	"	65343	J. A. Calder, Simcoe.....	3 "	75	Norfolk Evap. Co., Simcoe.
" 7	"	65345	G. W. Lea, Simcoe.....	3 "	75	Imperial Ext. Co., Toronto.
" 8	"	65347	Edgar Hicks, Tillsonburg..	3 "	71	St. Williams, Fruit and Preserves.
" 8	"	65349	Chas. Williams & Son, Tillsonburg.	3 "	45	Dom. Cannery, Hamilton.
" 8	"	65352	W. Bone, Tillsonburg . . .	3 "	75	Aylmer Canning Co.
" 8	"	65356	Hogarth & Son, Tillsonburg	3 "	60	McLaren's Imperial Cheese Co., Toronto.
" 9	"	65356	Butler Bros., St. Thomas..	3 "	75	J. H. Wethey, St. Catharines.
" 13	"	65263	P. Dodds & Son, Watford..	3 "	75	Wentworth Preserving Co., Hamilton.
" 13	"	65345	Rogers & Jackson, " . . .	3 "	75	Stuart's, Ltd., Sarnia.
" 14	"	65375	A. Scarsbrook, Petrolia . .	3 "	90	Crosse & Blackwell
" 14	"	65380	W. C. Palmer, Sarnia... .	3 "	75	Glassco Ltd., Hamilton.

MARMALADE.

Inspector's Report. (Is not an expression of opinion.)	Results of Analysis.							Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.	
	Insoluble.	Soluble.	Total.		Residual.	Original.		

Concluded.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
Sterling Brand. Pure.	1.80	69.42	71.22	28.78	33.13	66.76	39.29	80894
Pure English Orange..	1.33	69.65	70.98	29.02	28.03	60.80	41.62	80895
Grape Fruit, Home Made.	1.85	66.67	68.52	31.48	17.03	60.50	49.64	80896
Pure Orange.....	1.70	67.26	68.96	31.04	33.63	63.17	33.63	80897
De Luxe, Pure Orange.	0.53	67.50	68.03	31.97	31.95	58.29	35.55	80898
Pure	1.22	66.14	67.36	32.64	18.23	60.49	47.91	80899
Pure Orange.	0.70	65.74	66.44	33.56	29.19	61.42	36.55	80900

JOHN TALBOT, INSPECTOR.

Orange.	2.08	70.10	72.18	27.82	5.02	65.60	65.08	65328
Pure Old English.	2.72	66.67	69.39	30.61	37.93	59.55	26.74	65331
Pure Orange.....	1.34	72.28	73.62	26.38	17.62	63.17	54.66	65343
Scotch Brand.	1.98	70.69	72.67	27.33	40.60	66.15	30.60	65345
Curling Brand, Seville Orange.	1.14	70.20	71.34	28.66	32.03	66.15	38.17	65347
Orange.....	3.14	68.07	71.21	28.79	31.97	63.17	36.10	65349
Orange.	1.50	72.54	74.04	25.96	40.59	58.92	31.95	65352
Betty's Orange.....	1.42	62.99	64.41	35.59	20.34	59.40	42.66	65355
Pure Orange.....	0.76	69.63	70.39	29.61	11.62	59.08	58.01	65356
Orchard Brand Orange.	1.48	70.80	72.28	27.72	36.78	60.95	34.02	65363
Pure English Orange..	0.66	69.50	70.16	29.84	28.32	66.86	41.18	65366
Pure Orange.....	1.40	67.89	69.29	30.71	24.79	63.69	43.10	65375
Glasco Pure Scotch...	1.16	69.15	70.31	29.69	10.31	64.57	58.84	65380

BULLETIN No. 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF NORTHERN ONTARIO—

Nov. 8	Marmalade.	78680	F. C. Preston Co., Haileybury.	3 jars.	1.05	St. Williams F. & P. Co., St. Williams.	
" 12	"	78683	Grills Co., New Liskeard...	3 "	75	Glassco Ltd., Hamilton.	
" 12	"	78687	Frank Heasman, New Liskeard.	3 "	60	Aylmer Canning Co., Hamilton.	
" 12	"	78689	Binkley Co., New Liskeard.	3 "	90	Furnivall New, Ltd., Hamilton.	
" 17	"	78699	Rava & Pianjetti, Cobalt...	3 "	1.05	Canada Preserving Co., Hamilton.	
" 17	"	78700	Jos. Zion, Cobalt.	3 "	75	Home Made Mfg. Co., Toronto.	

DISTRICT OF MANITOBA—

Nov. 6	Marmalade..	79630	A. McTavish, Minto, Man..	1 lb.	90	Wagataffa Co., Ltd Hamilton.	
"	"	79631	R. W. Frank, Minto, Man..	"	90	Crosse & Blackwell, London, Eng.	
"	"	79632	R. E. Sadler, Elgin, Man...	"	00	S. Williams P Co., St. Williams, Ont.	
" 12	"	79633	Fort Garry Market Co., Garry St., Winnipeg.	"	60	Graham Prod. Co. Winnipeg.	
" 13	"	79634	Avenue Store, 1114 Portage Avenue.	"	45	St. Clair Preserv. Co., St. Clair, O.	
" 14	"	79635	P. J. Halleman, Swan Lake Man.	"	85	Empress Mfg Co., Co., Vanc.	
" 27	"	79636	B. Gimosky, 1260 Selkirk Ave., Winnipeg.	"	90	Aylmer Canning Co. Hamilton.	
Dec. 1	"	79637	A. R. Christie, 353 Portage Avenue, Winnipeg.	"	90	Anslley, Hallberg, St. Louis Co, Ltd Winnipeg.	
" 4	"	79638	S. R. Harden, 1308 Portage Avenue, Winnipeg.	"	90	Libby McNeill & Libby, Guelph.	
" 4	"	79639	James Stanley, 739 Ashburn Street, Winnipeg.	"	90	Shirriff, Toronto.	

DISTRICT OF SASKATCHEWAN—

Dec. 18	Marmalade..	76991	J. D. Munroe, Eyebrow....	3 jars.	90	No Vary Product Co., Toronto	Moosejaw Groc., Moosejaw.
" 6	"	76967	W. P. Ball, Assiniboia.	"	90	Imperial Ext. Co., Co., Toronto.	A. McDonald & Co., Moosejaw.
" 6	"	76972	Sanford Co., Ltd, Assiniboia	"	75	Empress Mfg Co., Ltd., Vanc.	Mfrs.....

MARMALADE.

Inspector's Report. (Is not an expression of opinion.)	Results of Analysis.								Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.	No. of Sample.	
	Insoluble.	Soluble.	Total.		Residual.	Original.			

THOS. E. ARMSTRONG, INSPECTOR.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	
Curling Brand	1.50	77	72.27	27.73	42.97	67.50	27.80	78680
.....	1.08	67.47	65.55	31.45	16.10	64.33	51.37	78683
.....	2.19	68.52	70.71	29.29	37.53	61.72	30.09	78687
.....	1.82	69.39	71.21	28.79	25.23	50.00	44.16	78689
.....	0.99	58.05	59.04	40.96	10.54	53.91	47.51	78699
Pure Orange.....	2.30	64.96	67.28	32.72	2.64	54.73	62.34	78700

J. B. COSGROVE, INSPECTOR.

.....	2.53	63.15	65.68	34.32	34.07	53.58	29.08	79630	
.....	1.97	69.70	71.67	28.33	31.97	55.43	37.73	79631	
Curling Brand.....	2.14	67.45	69.59	30.41	31.59	62.46	35.86	79632	
Orange, Lemon and Grape fruit.....	5.53	56.20	61.73	38.27	20.28	51.44	35.92	79633	
Orange.....	4.18	61.45	65.63	34.37	22.31	...	39.14	79634	Contains Glucose and Salicylic acid. Polariscopes: Direct +79.1 at 20° C.; Invert +50.1 Glucose 32% Adulterated.
Orange, Empress Bd..	5.64	66.60	72.24	27.76	9.95	59.40	56.65	79635	
.....	2.74	67.25	69.99	30.01	35.28	63.08	31.97	79636	
Burdick's Winnipeg...	4.31	65.55	69.86	30.14	18.77	61.24	46.78	79637	
.....	3.05	62.70	65.75	34.25	19.60	58.48	43.10	79638	
Imperial Scotch Bd..	2.86	69.05	71.91	28.09	27.59	65.52	41.46	79639	

L. H. HALL & J. M. DANIS, INSPECTORS.

No Vary Brand.....	2.82	67.20	70.02	29.98	43.87	61.54	23.33	76991
.....	1.57	67.70	69.27	30.73	37.99	63.99	19.71	76997
Empress Brand.....	2.12	66.55	68.67	31.33	26.06	61.23	40.47	76972

BULLETIN No. 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF SASKATCHEWAN—

1917.							
Dec. 7	Marmalade.	76977	Stevenson Bros., Shaunavon	3 jars	90	St. Williams F. P. Co., St. Williams	Campbell. Wil-
"	"	76980	McNichol & Brown, Shaunavon.	"	75	Waddell Pres. Co., Ltd., Brantford.	son & Strathee
Nov. 13	"	73583	H. B. Hall & Sons, Lloydminster	"	75	Chivers, Histon, Cambridge, Eng.	Regina.
" 15	"	78588	Tarbel Bros., No. Battleford	"	90	J. H. Wetthey, St. Catharines.	"
"	"	78594	Hub Clothiers, No. Battleford.	"	75	Shirriff, Toronto.	"
" 20	"	78600	Jacob Goldstein, Radisson.	"	90	St. Williams, Norfolk, Ont.	"
" 27	"	81804	A. Gunn, Fielding.	"	90	Burdick's, Winnipeg.	"
" 28	"	81806	Borden Trading Co., Borden	"	76	"	"

DISTRICT OF ALBERTA—

Oct. 24	Marmalade.	52817	The John Irwin Co., Ltd., Calgary.	3 jars	75	Mrs. Eaman, Calgary.	
" 24	"	52818	Wm. Quirk, Calgary.	3 "	55	J. H. Wetthey, Ltd., St. Catharines.	
" 25	"	52419	Jenkins & Co., East Calgary.	3 "	90	Chivers & Sons, Ltd., Cambridge, Eng.	
" 25	"	52820	Frizzles Grocery, East Calgary.	3 "	75	King Bead Mfg. Co. Ltd., Mississauga City, B.C.	
" 26	"	52821	Mrs. R. Berber, 509 4th St., East Calgary.	5 "	90	Jas. Robertson & Son, Paisley, Scot.	
" 26	"	52822	Maitland & Co., 334 8th Ave., East Calgary.	3 "	75	No Vary Products Co., Ltd., Toronto.	
" 26	"	52823	"	3 "	75	W. H. Malkin & Co., Ltd., Vancouver.	
" 29	"	52824	W. E. Lord Co., Ltd., Red Deer.	3 "	90	Imperial Extract Co., Toronto.	
" 30	"	52825	A. M. Campbell, Lacombe.	3 "	90	Wagstaffe, Ltd., Hamilton.	
" 30	"	52826	Lawson & Co., Ltd., Wetaskiwin.	3 "	90	St. Williams F. P. Co., Ltd., St. Williams, Ont.	

DISTRICT OF ROCKY MOUNTAINS—

Nov. 2	Marmalade.	68521	Star Grocery, Nelson.	3 jars	75	The McDonald Jan. Co., Nelson, B.C.	
" 2	"	68522	"	3 "	75	J. T. Bealby Nelson, B.C.	
" 5	"	68530	R. A. Smith, Moyie, B.C.	3 "	90	Wagstaffe, Ltd., Hamilton.	
" 8	"	68542	F. Roo, Elko.	3 "	75	J. H. Wetthey, St. Catharines.	
" 15	"	68551	Trites Wood Co., Fernie	3 "	75	Budick's, Winnipeg.	

MARMALADE.

Inspector's Report. (Is not an expression of opinion).	Results of Analysis.								Remarks, and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.	No. of Sample.	
	Insoluble.	Soluble.	Total.		Residual.	Original.			

Concluded.

	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.		
St. Williams Brand...	1.5 ⁶	71.56	73.12	26.88	37.31	61.23	34.25	76977	
.....	1.45	61.90	63.35	36.65	27.44	58.48	34.46	76980	
.....	1.10	71.50	72.60	27.40	21.56	66.45	49.94	78583	
.....	2.03	65.00	67.03	32.95	28.04	61.24	36.96	78588	
.....	2.32	67.40	69.72	30.28	20.73	63.08	46.67	78594	
.....	2.19	72.66	74.79	25.21	48.70	61.86	23.90	78600	
.....	1.36	67.20	68.56	31.44	11.53	58.48	55.07	81804	
.....	1.43	67.50	68.93	31.07	8.06	56.04	59.44	81806	

A. W. R. MARKLEY, INSPECTOR.

Orange, Pure Cane Sugar, Pure Fruit.	1.42	67.65	69.07	20.93	35.20	58.48	32.45	52817	Contains a little Glucose. Polariscope direct + 39.1 invert - 3.8. Glucose less than 9 p.c. Pass.
Pure Orange.....	1.31	66.20	67.51	32.49	36.63	58.48	29.57	52818	
Oranges and Sugar only.	3.18	72.30	75.48	24.52	32.33	65.21	39.97	52819	
Pure Orange ..	2.24	68.15	70.39	29.61	32.41	.....	35.74	52820	
Scotch.....	4.15	69.20	73.35	26.85	32.48	59.40	36.72	52821	
No Vary Bo-Ka Brand.	3.75	67.35	71.10	24.90	34.75	58.48	32.60	52822	
Oranges and Sugar only, Malkins best.	1.92	70.80	72.72	27.28	26.15	58.48	44.65	52823	
Shirreffs Shredded Orange.	0.74	72.00	72.74	27.26	21.48	65.82	50.52	52824	
Fine Old English, Pure.	2.60	66.50	69.10	30.90	18.16	52.35	48.34	52825	
Curling Brand, Seville Orange.	1.77	68.30	70.07	29.93	30.91	65.21	37.39	52826	

THOS. PARKER, INSPECTOR.

.....	3.93	68.95	72.88	27.12	55.76	67.59	13.19	68521	
.....	6.76	62.60	69.36	30.64	10.55	57.18	52.06	68522	
.....	3.46	63.10	66.56	33.44	18.68	58.43	44.42	68530	
.....	1.47	67.25	68.72	31.28	20.20	62.55	47.05	68542	
.....	3.57	65.60	69.17	30.83	11.77	60.02	53.83	68551	

BULLETIN No. 399—

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	
				Quantity.	Cents.	Manufacturer.	Furnisher.

DISTRICT OF VANCOUVER—

1917.							
Nov. 16	Marmalade.	76216	Mitchell & Cahill, Commercial Drive & 2nd Ave., Vanc.	3 jars.	75	Alice Stanley, Oakalla, B.C.	
" 19	"	76217	J. Harkness, 2505 Main St., Vancouver.	3 "	75	Aylmer Canning Co., Hamilton.	
" 19	"	76218	Mt. Pleasant, Grocery, 2345 Main St., Vanc.	3 "	75	Robinsons, Hamilton.	
" 20	"	76220	Elliott & Co., 15th Ave. and Kingsway, Vanc.	3 "	90	Wagstaffe, Ltd., England.	
" 22	"	76221	Braidwood's Grocery, 804 Commercial Drive, Vanc.	3 "	75	Mrs. Pound, 2849 St. George, St., Vancouver.	
" 23	"	76222	T. T. McDowell, 938 Granville St., Vanc.	3 "	75	L. Noel & Sons, Ltd., London, Eng.	
" 23	"	76223	Cow Butter Store, 195 Hastings St., E., Vanc.	3 "	75	The W. H. Malkin, Co., Ltd., Vanc.	

MARMALADE.

Inspector's Report. (Is not an expression of opinion).	Results of Analysis.							Remarks and Opinion of the Chief Analyst.
	Solids.			Water.	Sucrose.		Sugars other than sucrose, etc.	
	Insoluble.	Soluble.	Total.		Residual.	Original.		

G. G. ARMYTAGE, INSPECTOR.

	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.		
Stanley's.....	3.43	64.90	68.33	31.67	21.65	60.02	48.25	76216	
.....	4.64	62.15	66.79	33.21	42.01	59.70	20.14	76217	
.....	2.28	50.85	53.13	46.87	11.48	47.69	39.37	76218	Contains Salicylic Acid.
.....	4.37	61.40	65.77	34.23	38.96	55.91	22.44	76220	Adulterated.
Mrs. Pound's.....	2.72	65.35	68.07	31.93	18.99	61.91	46.36	76221	
.....	1.89	70.85	72.74	27.26	17.47	..	53.38	76222	Polariscope direct + 18.2
Malkins Best.....	1.89	69.70	71.59	28.41	38.14	66.01	31.66	76223	invert—4.2 Glucose indicated less than 1%. Pass.
									Contains Salicylic Acid. Adulterated.